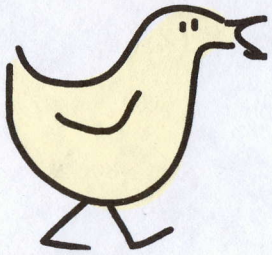
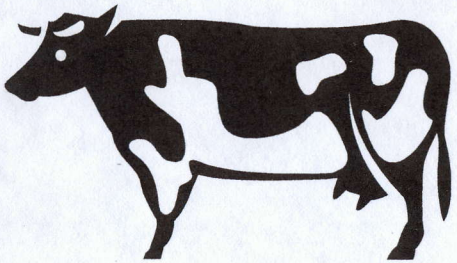
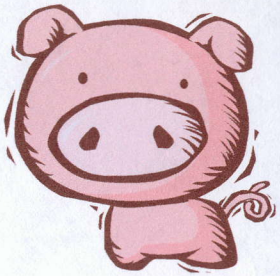
Farmer Fred Ponders Perimeter

By:

Kylor Sorensen



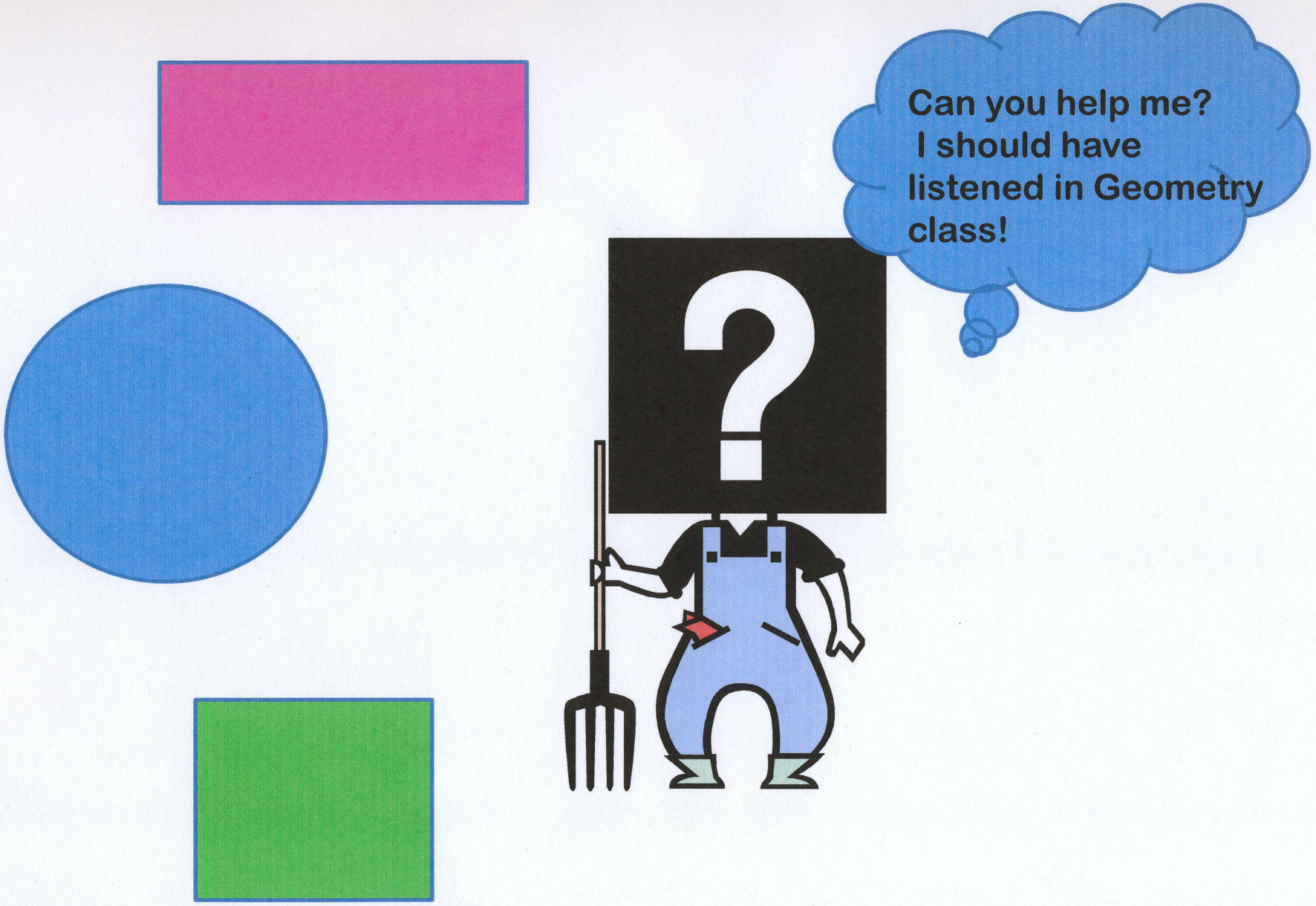




Farmer Fred was working very hard one day to make sure that his farm was the best that it could be.

All of the sudden Farmer Fred had an idea. He wanted to construct fences in shapes around certain places of his farm.

As Farmer Fred worked on figuring out the perimeters of his farm he became very confused, you see Farmer Fred didn't pay attention during geometry class when he was younger and it was beginning to show.


Can you help me?
I should have
listened in Geometry
class!
?

Farmer Fred really needs your help!

Will you go through his farm with him and make sure he is calculating the perimeters correctly?

He has heard that you are good in Geometry.

If you agree to help Farmer Fred, your task is to use the correct formula to solve Farmer Fred's problem, understand the results and give Farmer Fred your conclusion.

First Farmer Fred needs a quick review of what some of the words actually mean as he ponders perimeter.

Help Farmer Fred match the following definitions to the terms.

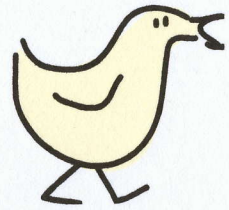
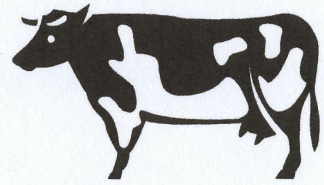
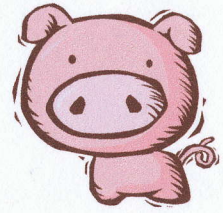
To check your answers lift up the barn.

1. Number that is approximately 3.14
2. The sum of the lengths of the sides of a polygon
3. A chord that passes through the center of a circle
4. A parallelogram that is both a rhombus and a rectangle
5. A parallelogram in which at least one angle is a right angle
6. The set of all points in a plane that are a given distance from a given point in the plane
7. A segment joining the center of a circle to a point on the circle
8. Consists of yards, feet, inches, centimeters, or millimeters
9. Segments that have the same length
10. A segment joining two points on a circle

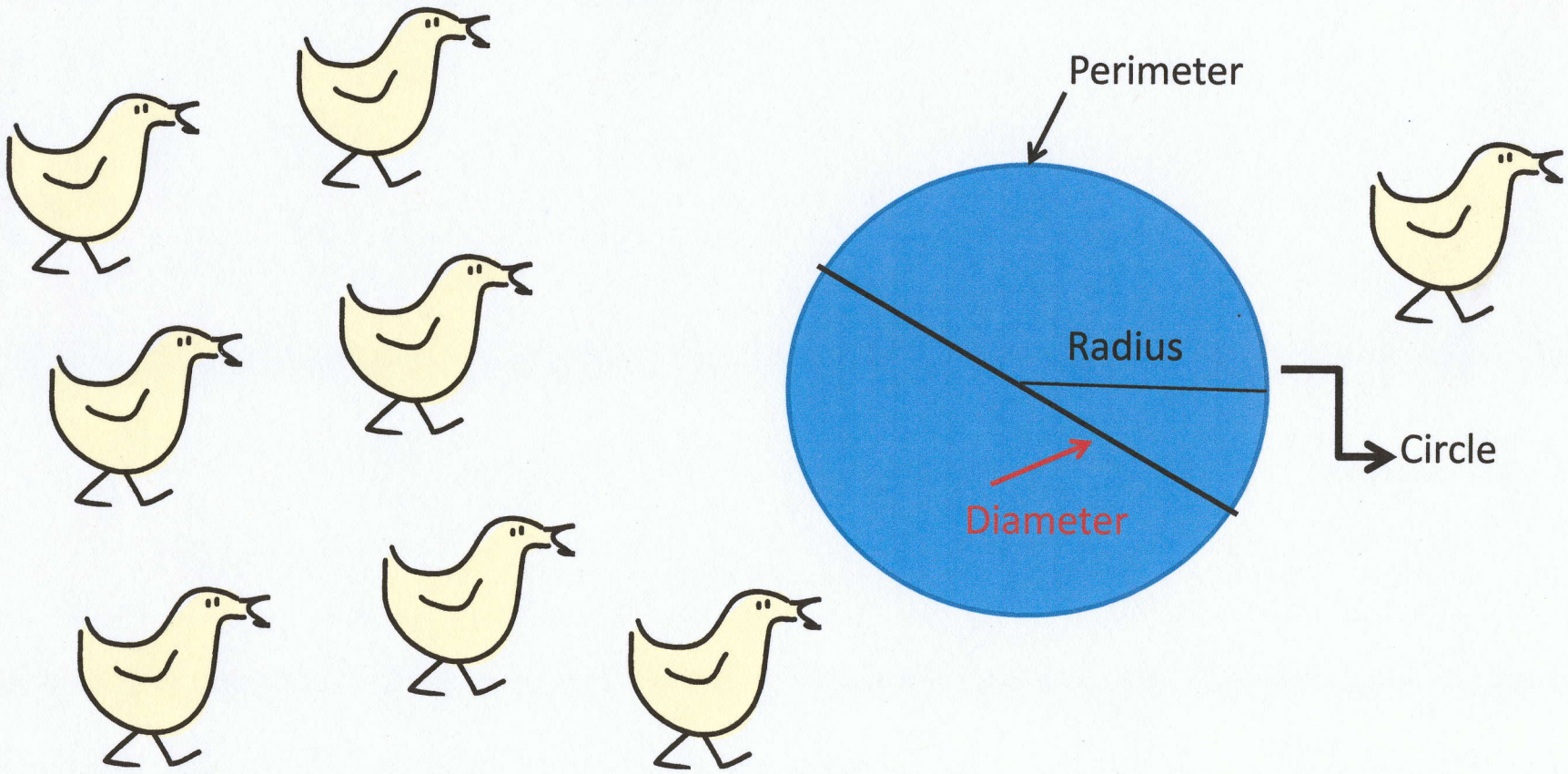
A. Congruent
B. Rectangle
C. Units of Measurement
D. Radius
E. Perimeter
F. Square
G. Chord
H. Pi
I. Diameter
J. Circle


1. H
2. E
3. I
4. F
5. B
6. J
7. D
8. C
9. A
10. G

Ok, now that we have the basic terms reviewed, lets make our three stops on the farm:

1. Chickens 
2. Cows 
3. Pigs 

The first stop is the chicken coop. Farmer Fred has constructed a coop that is circular in shape. Using the data given help Farmer Fred figure out the perimeter!



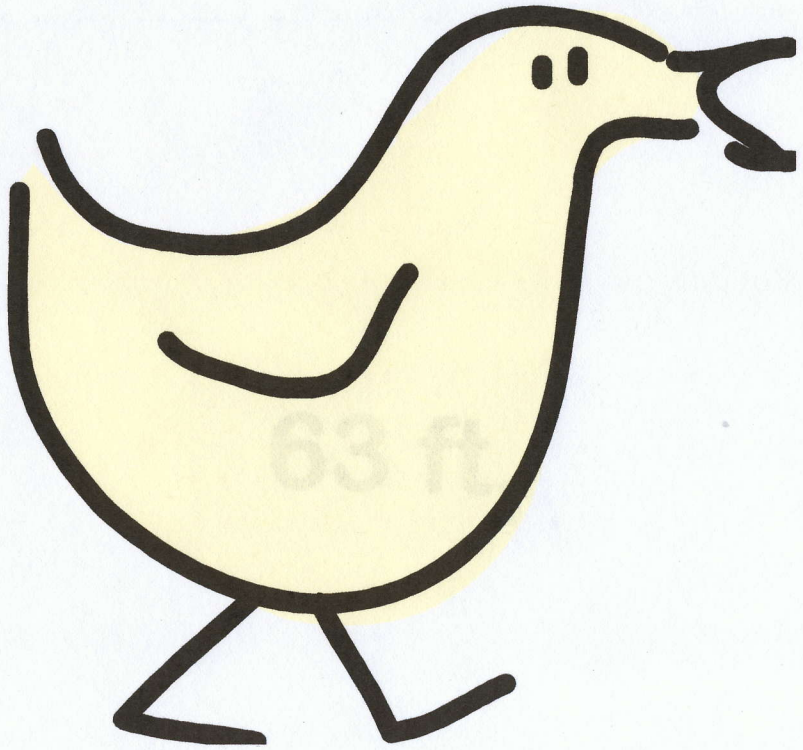
Farmer Fred wants a circle with radius equal to 10ft.

Farmer Fred remembered the formula to find the perimeter of a circle is (2)(Pi)(Radius)or (Pi)(Diameter).

Help farmer Fred find the perimeter of the circle.

Please Round to the nearest whole number.

Did you help Farmer Fred?
Lift the chicken to see if you got
the right answer and worked
your problem out right.



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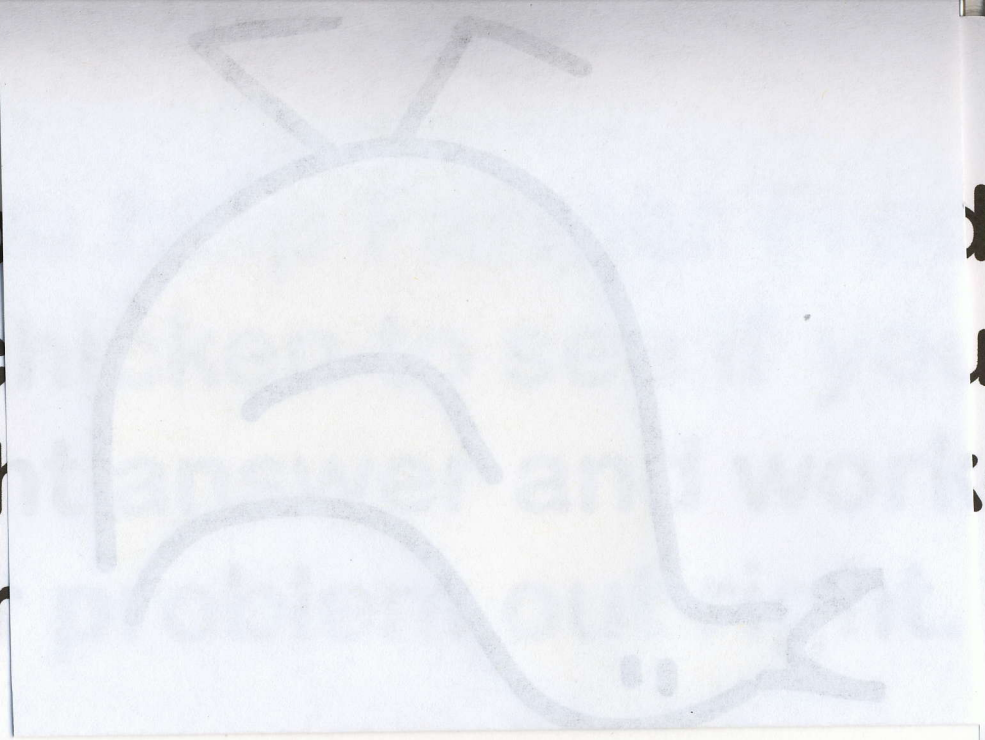
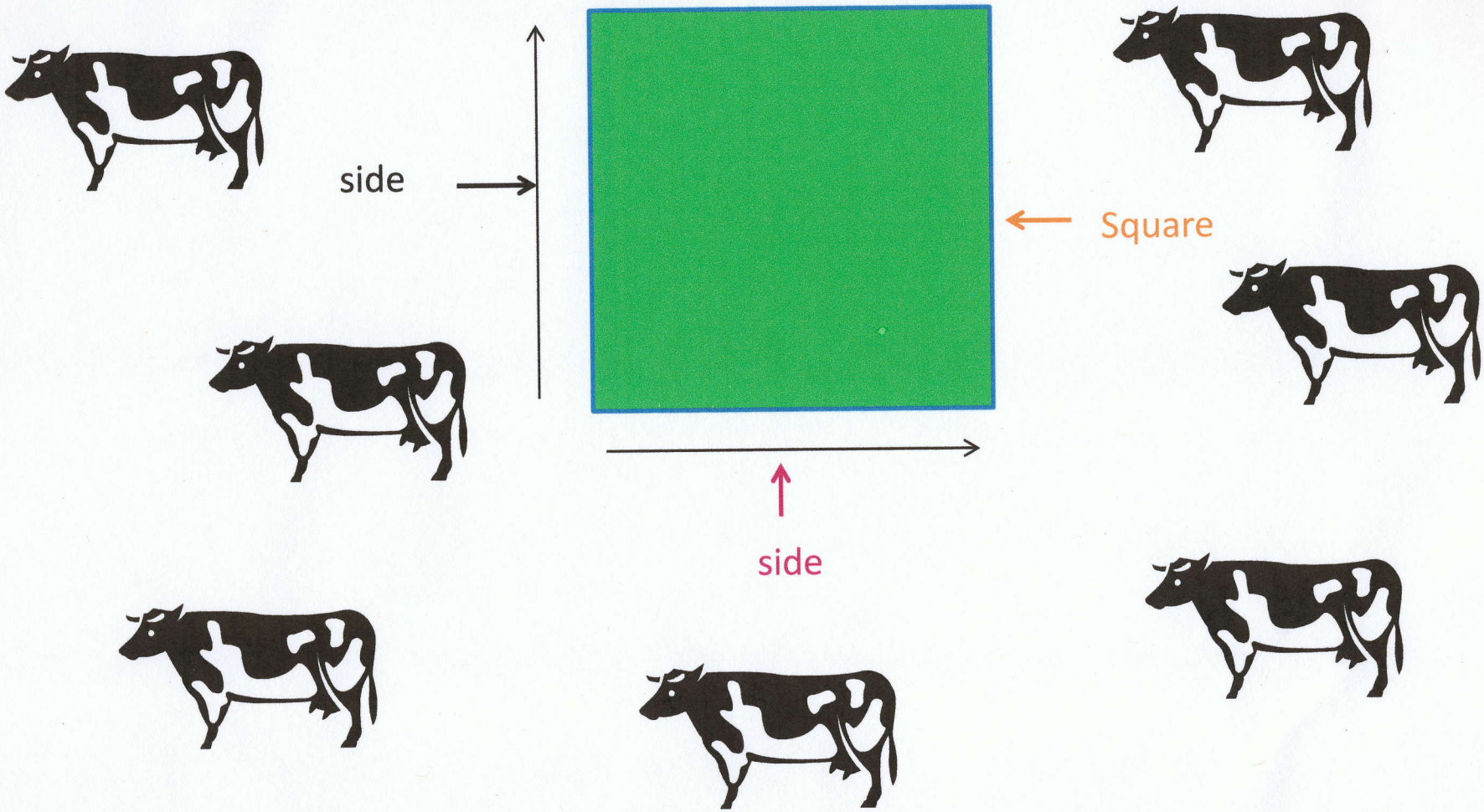


63 ft.

Lets work it out:

1. (2)(Pi)(10ft) would give you the formula.
2. 2 x 10ft = 20ft
3. 20ft x Pi = 63ft.
4. If you got this right move on to the cows

Next stop is the cow pasture. Farmer Fred is concerned that a square pasture is not large enough for the cows. Using the data given help Farmer Fred figure out the perimeter!



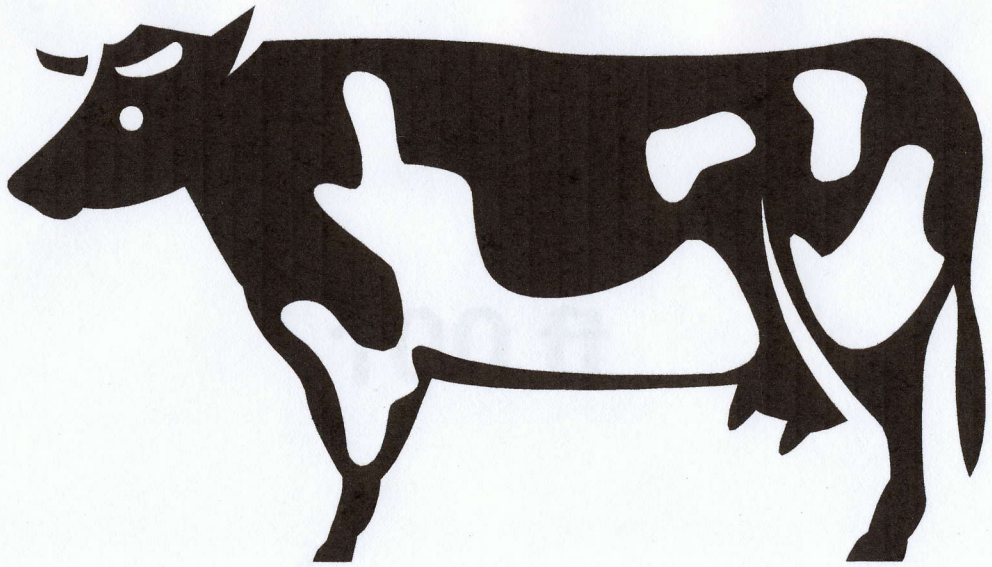
Farmer Fred wants the new dimensions of his fence to be 25 feet for each side.

Farmer Fred realized that to find the perimeter of a square you must add all the sides together.

Please help Farmer Fred find the perimeter of the new pasture.

Did you help Farmer Fred?

Lift the cow to see if you got the right answer and worked the problem correctly.



D ed?

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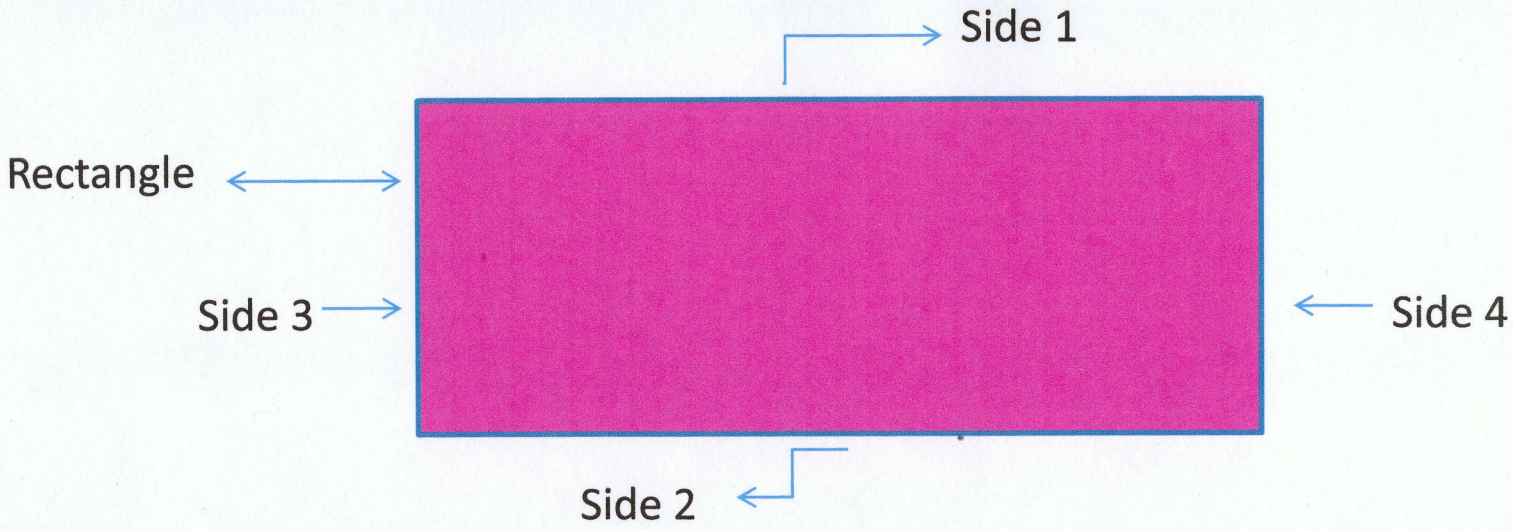
100 ft

Lets work it out:

1. 25ft + 25ft + 25ft + 25ft gives you the formula.
2. The perimeter of the new pasture = 100ft.
3. You also could have calculated 25ft x 4 (number of sides that forms a square).
4. If you answered this problem right move on to the pigs.

Farmer Fred realized that his pigs have produced more piglets than he thought. He thinks that the rectangular pen is too small for the pigs' increasing population. Farmer Fred believes that a perfect perimeter for the new pen would be 120ft. Help Farmer Fred find the lengths of the missing sides.



Farmer Fred wants a rectangle with a perimeter of 120ft.

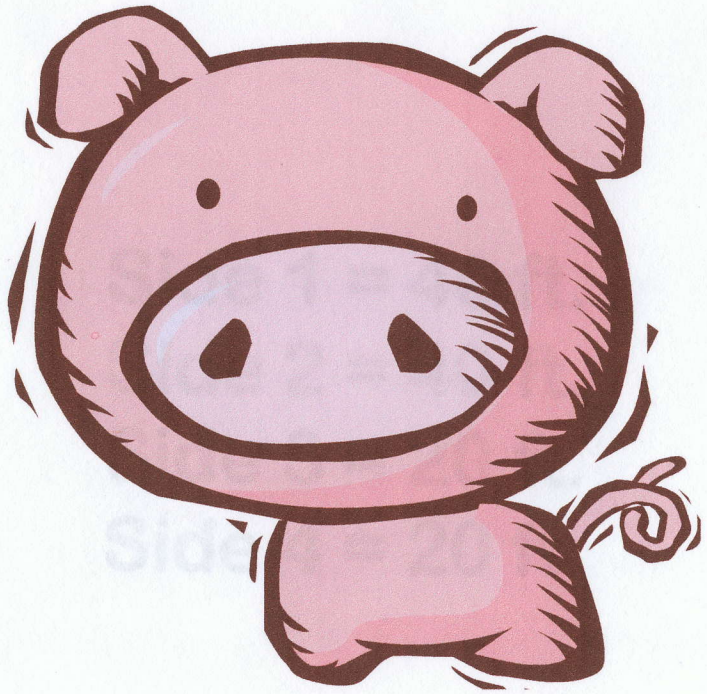
Farmer Fred wants a rectangle with opposite sides congruent.

He wants side 1 to be 40ft.

Please help Farmer Fred find the length of the other sides.

Did you help Farmer Fred?

Lift the pig to see if you got the right answer.



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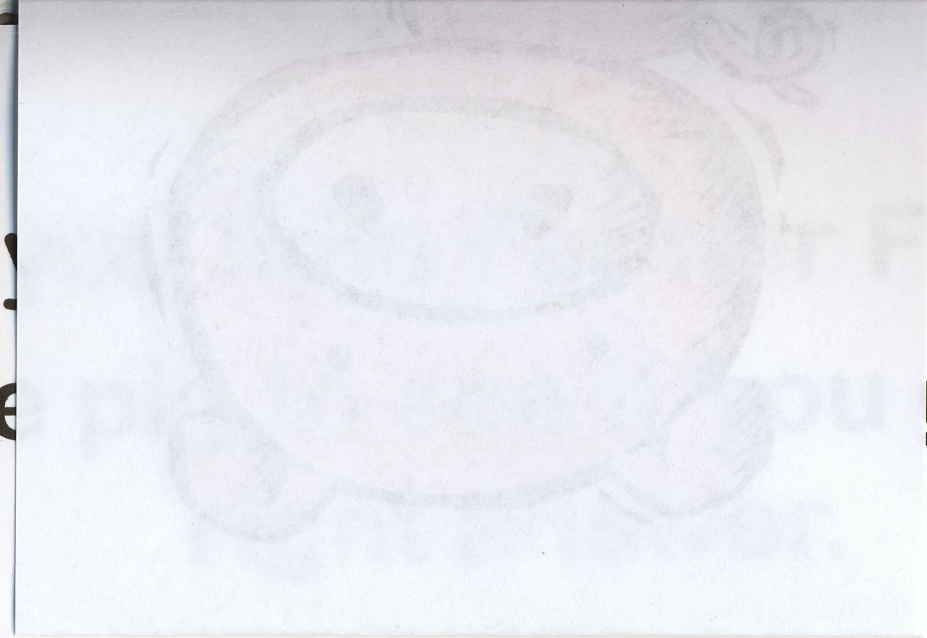
got the



Side 1 = 40 ft.
Side 2 = 40 ft.
Side 3 = 20 ft.
Side 4 = 20 ft.

Lets work it out:

1. Given: Side 1 is 40ft
2. Side 2 is congruent to side 1 so side 2 = 40 ft
3. 40ft + 40ft = 80ft
4. 120 =perimeter – 80ft = lengths of sides 1&2
5. = 40ft
6. Since sides 3 & 4 are congruent then take 40ft divided by two to get two congruent lengths.
7. 40ft divided by 2 = 20ft

Farmer Fred is very happy with your Geometry help.

His farm is now the best it can be!

Resources

Rhoad, R., Milauskas, G., Whipple, R. (2004). *Geometry for Enjoyment and Challenge.* Evanston: McDougalLittell/Houghton Mifflin (Glossary and page 8)

All illustrations were retrieved from Microsoft Office 2007 Clipart at:

http://office.microsoft.com/en-us/clipart/default.aspx?ofcresset=1

Help Farmer Fred practice with these free activities:

http://nlvm.usu.edu/en/nav/topic_t_3.html

http://www.mathleague.com/help/geometry/area.htm#perimeter